

(Practitioner's Docket No. H0001202)

AMENDMENTS TO THE CLAIMS

Please amend the claims as indicated below.

1. (Previously Presented) An oil filter, comprising:

a hollow housing having an inlet and an outlet and defining a chamber therein with a flow path between the inlet and outlet;

a mechanically active filter member disposed inside the housing in the flow path; and

a chemically active filter member disposed inside the housing in the flow path;

wherein the chemically active filter member comprises a plurality of particles having interstitial spaces therebetween, said particles having an average diameter of from 0.1 to 6 millimeters and being retained in said oil filter, the particles comprising a beneficial additive to be released into engine oil as said engine oil circulates through the interstitial spaces.

2. (Previously Presented) The oil filter of claim 1, wherein the beneficial additive comprises a basic salt that is at least one of the group consisting of calcium carbonate, potassium carbonate, potassium bicarbonate, aluminum dihydroxy sodium carbonate, magnesium oxide, magnesium carbonate, zinc oxide, sodium bicarbonate, sodium hydroxide, calcium hydroxide, potassium hydroxide, and mixtures thereof.

3. (Original) The oil filter of claim 1, wherein the particles further comprise a polymeric binder selected from the group consisting of polyamides, polyimides, polyesters, polyolefins, polysulfones, and mixtures thereof.

4. (Previously Presented) The oil filter of claim 1, wherein the mechanically active filter element is substantially cylindrical in shape, and wherein the chemically active filter element is also substantially cylindrical in shape and is disposed radially and coaxially inside of said mechanically active filter element.

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5. (Original) The oil filter of claim 1, wherein the particles of the chemically active filter member are connected together to form a substantially integral permeable member.

6. (Original) The oil filter of claim 1, wherein the particles are a product of a process comprising the steps of:

providing the polymeric binder in a finely divided form;
mixing the polymeric binder with the additive in a liquid solvent;
forming the mixture of the binder and salt into particles; and
removing the solvent from the particles by evaporation.

7. (Previously Presented) An oil filter, comprising:

a hollow housing having a tapping plate for placement proximate an engine surface, said tapping plate having an outlet aperture formed therethrough and an inlet aperture formed therethrough and space apart from said outlet aperture;

a mechanically active filter element disposed within said housing spaced away from said tapping plate;

a substantially cylindrical dividing wall member disposed within said housing adjacent said tapping plate;

said dividing wall member defining an inlet flow channel on the outside thereof within the housing and in fluid communication with said inlet aperture of said tapping plate;

said dividing wall member further defining an outlet flow channel therein in fluid communication with said outlet aperture of said tapping plate; and

a chemically active filter member disposed within said inlet flow channel of said housing between said tapping plate and said mechanical filter element,

said chemically active filter member comprising a plurality of particles retained in said oil filter having a diameter in a range of 0.10 to 6 mm, said particles consisting essentially of a beneficial additive to interact with engine oil as said engine oil circulates through the filter, said beneficial additive consisting essentially of an antioxidant, a basic salt, or a mixture of a basic salt and an antioxidant, said antioxidant

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being selected from the group consisting of imidazoline-phosphonate salts, substituted triazoles, sulfurized carboxylates, phenolic compounds, arylamino compounds, substituted thiazoles, substituted thiadiazoles; phosphosulfurized olefins, zinc dithiophosphates, and zinc dialkyldithiophosphates, aromatic sulfides, aromatic polysulfides, alkyl sulfides, alkyl polysulfides, sulfurized olefins, sulfurized carboxylic acid esters, sulfurized ester-olefins, and mixtures thereof.

8. (Original) The oil filter of claim 7, further comprising a foraminous divider disposed between the chemically active filter element and the mechanically active filter element

9. (Previously Presented) The oil filter of claim 7, wherein the particles of the chemically active filter element are a product of a process comprising the steps of:

separating the polymeric binder into a finely divided form;
mixing the polymeric binder with the additive in a liquid solvent;
forming the mixture of binder and additive into particles; and
removing the solvent from the particles by evaporation.

10. (Previously Presented) The oil filter of claim 7, wherein the basic salt is selected from the group consisting of calcium carbonate, potassium carbonate, potassium bicarbonate, aluminum dihydroxy sodium carbonate, magnesium oxide, magnesium carbonate, zinc oxide, sodium bicarbonate, sodium hydroxide, potassium hydroxide, calcium hydroxide, calcium hydroxide, and mixtures thereof.

11. (Cancelled)

12. (Cancelled)

13. (Previously Presented) A supplemental cartridge for use in conjunction with an oil filter, said supplemental cartridge comprising:

a hollow housing, comprising

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a tapping plate for placement proximate an engine surface, said tapping plate having an outlet aperture formed substantially centrally therethrough and an inlet aperture formed therethrough and spaced apart from said outlet aperture;

a cap opposite said tapping plate for placement proximate an oil filter, said cap having an inlet aperture formed substantially centrally therethrough and an outlet aperture formed therethrough and spaced apart from said inlet aperture;

an outer wall connecting said cap and said tapping plate;

a substantially cylindrical dividing wall member disposed within said housing and separating said housing interior into an inlet flow channel in fluid communication with said inlet aperture of said tapping plate, and an outlet flow channel in fluid communication with said outlet aperture of said tapping plate; and

a chemically active filter member disposed within said inlet flow channel of said housing, said chemically active filter member comprising a plurality of particles having a diameter in a range of 0.10 to 6 mm, said particles consisting essentially of a beneficial additive, said beneficial additive consisting essentially of at least one of an antioxidant, or a mixture of a basic salt and an antioxidant.

14. (Previously Presented) The supplemental cartridge of claim 13, wherein the basic salt is selected from the group consisting of calcium carbonate, potassium carbonate, potassium bicarbonate, aluminum dihydroxy sodium carbonate, magnesium oxide, magnesium carbonate, zinc oxide, sodium bicarbonate, sodium hydroxide, potassium hydroxide, calcium hydroxide, and mixtures thereof.

15. (Original) The supplemental cartridge of claim 13, wherein the particles of the chemically active filter element are a product of a process comprising the steps of:

separating the polymeric binder into a finely divided form;
mixing the polymeric binder with the additive in a liquid solvent;
forming the mixture of binder and additive into particles; and
removing the solvent from the particles by evaporation.

16. (Original) The supplemental cartridge of claim 13, further comprising:

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an auxiliary inlet tube attached to said outer wall of said housing and being in fluid communication with said inlet flow channel thereof; and

an auxiliary outlet tube attached to said outer wall of said housing and being in fluid communication with said interior thereof.

17. (Previously Presented) The oil filter of claim 1 wherein the beneficial additive comprises an antioxidant that is at least one of the group consisting of imidazoline-phosphonate salts, substituted triazoles, sulfurized carboxylates, phenolic compounds, arylamino compounds, substituted thiazoles, substituted thiadiazoles, phosphosulfurized olefins, zinc dithiophosphates, and zinc dialkyldithiophosphates, aromatic sulfides, aromatic polysulfides, alkyl sulfides, alkyl polysulfides, sulfurized olefins, sulfurized carboxylic acid esters, sulfurized ester-olefins, and mixtures thereof.

18. (Previously Presented) An oil filter, comprising:

a housing defining an inlet fluid opening and an outlet fluid opening, said inlet fluid opening and said outlet fluid opening defining a fluid path through said housing;

a mechanically active filter member disposed inside the housing, said mechanically active filter being disposed in said fluid path such that fluid flowing through said fluid path must pass through said mechanically active filter member; and

a chemically active filter member disposed inside the housing, said chemically active filter being disposed in said fluid path such that fluid flowing through said fluid path must pass through said chemically active filter member; wherein the chemically active filter member comprises a plurality of particles retained in said oil filter, said particles comprising from 90 to 97% by weight of a beneficial additive to be released into engine oil as said engine oil circulates through the oil filter, based on the total solid weight of the particles, wherein the beneficial additive comprises at least one of an antioxidant, an anti-wear agent, a basic salt, or a mixture thereof.